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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## TUNGSTEN IN JULY 1997

U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder produced from hydrogen-reduced metal powder, averaged 706 tons per month during the first 7 months of 1997. The average monthly reported consumption of tungsten in end-use products was 578 tons during January through July 1997. Trade data for June 1997 are included in this issue. Trade data for July will be published in a subsequent issue.

### Note

With the exception of prices, all data in this report have been rounded to no more than three significant digits. Totals were calculated by using unrounded data.

### Price

Prices for tungsten ore in dollars per metric ton unit (\$/mtu) from Metal Bulletin are listed below. Prices in dollars per short ton unit were converted from metric ton unit prices and rounded to the nearest dollar. These prices represent combined prices for wolframite and scheelite ores with a minimum WO<sub>3</sub> content of 65%.

September 1-30, 1997

Low \$40/mtu WO<sub>3</sub> (\$36/stu WO<sub>3</sub>)

High \$45/mtu WO<sub>3</sub> (\$41/stu WO<sub>3</sub>)

TABLE 1  
U.S. SALIENT TUNGSTEN STATISTICS 1/

(Metric tons, tungsten content)

Period	Concentrate			Reported scrap consumption	Intermediate products		
	Reported consumption	Imports for consumption	Stocks, end of period 2/		Net production 3/	Reported consumption 4/	Stocks, end of period 5/
1996: p/ January-December	5,420	4,190	569	2,450	7,530	11,300	1,360
1997:							
January	426	260	808	223	679	613	1,400
February	533	276	584	185	682	579	1,440
March	698	480	650	247	676	585	1,450
April	586	202	630	215	802	570	1,370
May	536	753	542	173	534	563	1,210
June	674	366	596	228	764	570	1,300
July	448	NA	584	271	803	564	1,350
Total	3,900	NA	XX	1,540	4,950	4,040	XX

p/ Preliminary. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Reported by consumers.

3/ Net production of tungsten metal powder, tungsten carbide powder, chemicals, and other products.

4/ Includes data on tungsten carbide powder from secondary sources.

5/ Reported by producers.

TABLE 2  
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF  
AMMONIUM PARATUNGSTATE, BY MONTH 1/

(Metric tons, tungsten content)

Period	Production	Consumption	Stocks, end of period 2/
1996: p/ January-December	4,450 3/	7,720	558
1997:			
January	540	663	572
February	W	689	586
March	W	712	690
April	W	790	666
May	645	716	750
June	765	W	W
July	W	840	611
Total	1,950	4,410	XX

p/ Preliminary. W Withheld to avoid disclosing company proprietary data.

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Producers and consumers.

3/ Excludes 4 months of withheld data.

TABLE 3  
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS 1/

(Metric tons, tungsten content)

Product	Net production 2/				Stocks at end of period		
	1997				1997		
	1996 p/	June	July	Year to date	1996 p/	June	July
Metal powder	3,720	329	365	2,140	815	726	802
Tungsten carbide powder (made from metal powder)	3,810	434	438	2,810	413	475	427
Cast and crystalline carbide powder; other	W	--	--	--	W	W	W
Chemicals	W	W	W	W	129	97	119
Total	7,530	764	803	4,950	1,360	1,300	1,350

p/ Preliminary. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Gross production less quantity used to make other products in table.

TABLE 4  
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE IN 1997 1/ 2/

(Metric tons, tungsten content)

End use	June	July	Year to date
Steel:			
Tool	W	W	W
Other	10	9	78
Superalloys	21	23	148
Other alloys (excludes steels and superalloys) 3/	W	W	W
Cemented carbides 4/ 5/	462	464	3,250
Mill products made from metal powder	38	28	W
Chemical uses 6/	W	W	W
Miscellaneous and unspecified	39	39	570
Total	570	564	4,040

W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Does not include materials used in making primary tungsten products.

3/ Includes welding and hard-facing rods and materials, wear- and corrosion-resistant alloys, and nonferrous alloys.

4/ Formerly called "Cutting and wear-resistant materials." Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

5/ Based on reported consumption plus information from other sources.

6/ Formerly called "Chemical and ceramic uses."

TABLE 5  
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS IN 1997 1/ 2/

(Metric tons, tungsten content)

Period	Ferro- tungsten	Tungsten metal powder	Tungsten carbide powder 3/	Scheelite (natural, synthetic)	Tungsten scrap	Other tungsten materials 4/	Total
Consumption:							
January	48	38	492	--	29	6	613
February	48	55	442	--	26	8	579
March	42	46	459	--	28	10	585
April	47	60	428	--	27	8	570
May	34	59	436	--	27	7	563
June	33	53	453	--	21	11	570 r/
July	32	44	453	--	26	9	564
January-July	284	355	3,160	--	184	59	4,040
Stocks:							
January	21	38	293	--	23	11	387
February	24	26	280	--	22	12	363
March	24	26	297	--	26	17	390
April	25	26	303	--	29	12	394
May	18	26	286	--	27	19	376
June	17	26	314	--	26	14	396
July	20	26	313	--	32	16	407

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Does not include materials used in making primary tungsten products.

3/ Based on reported consumption plus information from other sources.

4/ Includes tungsten chemicals.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of origin	Ores and concentrates	Ammonium tungstates	Ferro- tungsten	Metal powder	Tungsten carbide	Other e/ 2/	Total	Total year to date
1996 total	4,190	1,580	535	404	404	2,820	9,930	XX
1997:								
April	202	140	30	17	62	175	625	7,420
May	753	206	130	53	40	198	1,380	8,800
June:								
Australia	23	--	--	--	--	--	23	23
Austria	--	--	--	--	--	2	2	19
Belgium	--	--	--	(3/)	--	(3/)	(3/)	24
Bolivia	140	--	--	--	--	--	140	322
Canada	--	--	--	(3/)	2	(3/)	2	12
Chile	--	--	--	--	--	--	--	11
China	--	--	--	13	29	103	145	5,860
Czech Republic	--	--	--	1	--	--	1	9
France	--	--	--	--	(3/)	(3/)	(3/)	21
Germany	--	1	--	1	14	1	17	188
Hong Kong	--	--	--	--	--	34	34	162
Hungary	--	--	--	--	--	1	1	4
India	--	--	--	--	3	--	3	8
Ireland	--	--	--	--	--	(3/)	(3/)	(3/)
Israel	--	--	--	--	--	2	2	15
Italy	--	--	--	--	--	(3/)	(3/)	(3/)
Japan	--	--	--	1	--	4	5	51
Kazakhstan	104	--	--	--	--	--	104	477
Korea, Republic of	--	--	--	--	--	(3/)	(3/)	3
Latvia	--	--	--	10	--	--	10	10
Mexico	14	--	--	--	--	(3/)	14	102
Netherlands	--	--	--	--	--	1	1	18
Peru	21	--	--	--	--	--	21	106
Portugal	--	--	--	--	--	--	--	378
Russia	53	--	30	--	--	--	83	1,340
Rwanda	--	--	--	--	--	--	--	51
Singapore	--	--	--	--	--	(3/)	(3/)	(3/)
Spain	--	--	--	--	--	--	--	(3/)
Sweden	--	--	--	1	--	(3/)	1	55
Switzerland	--	--	--	--	--	1	1	4
Taiwan	--	--	--	--	--	--	--	(3/)
Thailand	10	--	--	--	--	--	10	25
Turkey	--	--	--	--	--	--	--	1
United Kingdom	--	--	--	20	(3/)	40	60	184
Uzbekistan	--	--	--	--	--	17	17	17
Total	366	1	30	48	48	207	700	9,500
Total, year to date	2,340	994	431	176	4,280	1,290	9,500	XX

e/ Tungsten content estimated in part. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other unwrought tungsten, wrought tungsten, calcium and other tungstates, tungsten oxides, tungsten chlorides, other tungsten compounds, ash and residues containing mainly tungsten, and other mixtures of inorganic compounds containing tungsten.

3/ Less than 1/2 unit.

Note: Imports of waste and scrap in June 1997 totaled 99 metric tons, tungsten content.

Source: Bureau of the Census.

TABLE 7  
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of destination	Ores and concentrates e/	Ammonium tungstates	Metal powder e/	Tungsten carbide	Other e/ 2/	Total	Total year to date
1996 total	17	150	240	1,290	289	1,990	XX
1997:							
April	--	10	23	92	44	169	565
May	3	--	38	77	45	162	729
June:							
Argentina	--	--	--	--	(3/)	(3/)	(3/)
Australia	--	--	(3/)	2	(3/)	3	5
Austria	--	--	--	--	--	--	7
Belgium	--	--	(3/)	--	(3/)	(3/)	1
Brazil	--	--	(3/)	(3/)	(3/)	(3/)	4
Canada	--	--	3	19	8	30	239
Chile	--	--	--	--	--	--	1
China	--	--	--	--	(3/)	(3/)	3
Denmark	--	3	--	--	--	3	3
Egypt	--	--	--	--	--	--	(3/)
Finland	--	--	--	--	--	--	(3/)
France	--	--	2	--	1	3	29
Germany	--	--	17	35	7	60	245
Greece	--	--	--	--	--	--	(3/)
Guatemala	--	--	--	--	--	--	(3/)
Hong Kong	(3/)	--	--	(3/)	2	2	6
Hungary	--	--	--	--	(3/)	(3/)	6
India	--	--	(3/)	--	2	2	16
Indonesia	--	--	--	--	--	--	(3/)
Ireland	--	--	--	1	(3/)	1	3
Israel	--	--	--	--	(3/)	(3/)	2
Italy	--	--	--	10	(3/)	10	44
Japan	--	7	--	7	2	16	59
Korea, Republic of	--	--	(3/)	3	1	4	14
Lithuania	--	--	--	--	--	--	1
Luxembourg	--	--	--	--	--	--	(3/)
Mexico	--	--	--	1	13	13	30
Netherlands	--	--	10	--	(3/)	10	17
New Zealand	--	--	--	--	--	--	(3/)
Norway	--	--	--	--	--	--	(3/)
Papua New Guinea	--	--	--	--	--	--	(3/)
Peru	--	--	--	(3/)	--	(3/)	1
Philippines	--	--	--	--	--	--	1
Portugal	--	--	--	--	--	--	3
Saudi Arabia	--	--	--	(3/)	--	(3/)	(3/)
Singapore	--	--	--	2	(3/)	2	8
Slovakia	--	--	--	--	--	--	(3/)
South Africa	--	--	--	1	(3/)	1	24
Spain	--	--	(3/)	--	1	1	7
Sweden	--	--	--	6	(3/)	6	60
Switzerland	--	--	4	--	(3/)	4	14
Taiwan	--	--	--	2	2	4	16
Thailand	--	--	--	--	(3/)	(3/)	1
Turkey	--	--	--	--	--	--	1
United Arab Emirates	--	--	--	--	(3/)	(3/)	(3/)
United Kingdom	--	--	(3/)	(3/)	1	1	28
Venezuela	--	--	--	--	(3/)	(3/)	3
Other	--	--	--	--	(3/)	(3/)	1
Total	(3/)	10	37	91	41	179	907
Total, year to date	8	20	148	501	230	907	XX

e/ Tungsten content estimated in part. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes wrought tungsten, ferrotungsten, and other tungstates.

3/ Less than 1/2 unit.

Note: Estimated exports of waste and scrap in June 1997 totaled 21 metric tons, tungsten content.

Source: Bureau of the Census.